

VIGDORCHIK, N. A.

Medicine, Industrial

Some considerations regarding the methodology of studying diseases which cause the loss of working capacity. Sov.zdrav., 11, No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952, 2. Unclassified.

VINDORCHIK, N. A.

01A

837. PNEUMOCONIOSIS AND SILICOS IS. Vindorohik, N. A. (Giiena i Sanit. (Hyg. and Sanita), Jan. 1951, 20-25).

Existing evidence leads to the conclusion that pneumoconiosis is caused only by quartz dust. Other dusts do not penetrate further than the alveoli, and cause only mechanical irritation, while very small (1 to 3 micron) particles of quartz have the physical and chemical properties necessary to be absorbed by the phagocytes and cause fibrosis of the perialveolar tissue.

immediate source clipping

VIGDORCHIK, N. A.

887. PNEUMOCONIOSIS AND SILICOSIS. Vigdorohik, N. A. (Gigiena i Sanit. (Hyg. and Sanit)), Jan. 1961, 20-25).

Existing evidence leads to the conclusion that pneumoconiosis is caused only by quartz dust. Other dusts do not penetrate further than the alveoli, and causes only mechanical irritation, while very small (1 to 3 micron) particles of quartz have the physical and chemical properties necessary to be absorbed by the phagocytes and cause fibrosis of the perialveolar tissue.

immediate source clipping

VIGDORCHIK, N. A.

837. PNEUMOCONIOSIS AND SILICOSIS. Vigdorshik, N. A. (Gigiena i Sanit. (Hyg. and Sanitn), Jan. 1961, 20-25).

Existing evidence leads to the conclusion that pneumoconiosis is caused only by quartz dust. Other dusts do not penetrate further than the alveoli, and causes only mechanical irritation, while very small (1 to 3 micron) particles of quartz have the physical and chemical properties necessary to be absorbed by the phagocytes and cause fibrosis of the perialveolar tissue.

immediate source clipping

CA

**Pneumoconiosis and silicosis.** N. A. Nigibachik  
*Gigiena i Sanit.* 1951, No. 1, 20-5. Review of the available  
data shows that pneumoconiosis cannot arise from quartz-  
free dust and that there is no mechanism whereby fibrotic  
changes may take place under the influence of quartz-free  
particles. However, some silicate dusts (asbestos, etc.) do  
cause pneumoconiosis since they decomp. in the body to  
liberate silica. Toxic dusts, such as fluorides, Be salts,  
radioactive dusts, and Cr salts lead to local toxic effects.  
Numerous references. G. M. Kosolapoff



VIGDORCHIK, V.M., kandidat tekhnicheskikh nauk

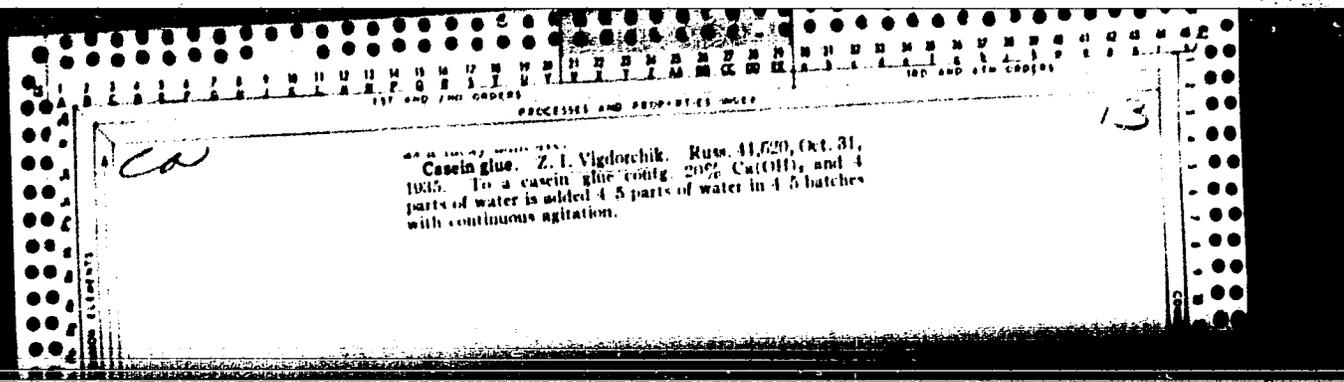
Apparatus for electric tensometric tests. Zav.lab.22 no.7:882 '56.  
(MLRA 9:12)

1. Chkalovskiy sel'skokhozyaystvennyy institut  
(Strain gauges)

VIGDORCHIK, V. YA.

22730 Vigdorichik, V. Ya. Ftor V. Profilaktike Ariesa Zuvob Zdravookhranenie  
Sob. Latvii, Sb. 3, 1949, S.88-102-Rezyump Na Latysh. Yaz. Othalmologiya

So: Letopis', No. 30, 1949









VIGDORCHIK, YE. A.

INDUSTRIAL HYGIENE

Retention of aerosols through breathing. Trudy Len. inst. gig. 11 pt. 2,  
1948, Unclassified.

Monthly List of Russian Accessions, Library of Congress, August 1952.  
Unclassified.

VIGDORCHIK, Ye.M.; SHEYNIN, A.B.

Analytical regularities of continuous dissolution with recirculation of the solid phase. Izv. vys. ucheb. zav.; tsvet. met. 8 no.1:43-51 '65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy i proyektnyy institut "Gipronikel".

VIKORONIK, Elizaveta Abramovna.

Retarding of aerosols in respiration Leningrad, 1948. (Trudy Leningradskogo nauchno-issledovatel'skogo instituta gigiény truda i professional'-nykh zabolevanii, t. 11. ch. 2) (Mic52-755) Collation of the original: 238 p.

Microfilm AC-74

VIGDORCHIK, Ye.M.; SHEKHIN, A.A.

Regularities of continuous teaching at constant active element concentrations. Izv. vyzh. ucheb. zav.; teoret. met. 7 n. 3:28-34, 1964. (NIPA 18:3)

1. Institut "Gipronikel" i Leningradskiy gornyy institut.

VIGDORCHIK, Ye.M.; SHEYNIN, A.B.

Continuous dissolution in a cascade of reactors with a constant concentration of the active reagent. Dokl. AN SSSR 160 no.3:661-664 Ja '65. (MIRA 18:3)

1. Proyeektnyy i nauchno-issledovatel'skiy institut Gipronikel'.  
Submitted July 18, 1964.

AUTHOR: Vigdorov, A.S.

32-12-17/71

TITLE: Short Reports (3) (Korotkiye soobshcheniya)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1437-1437 (USSR)

ABSTRACT: For the determination of the bisulfite content in the case of a simultaneous presence of sodium sulfite in the solution the following kind of drop method is recommended: 50 g of the reactive chlorobarium is dissolved in a solution of 10-20 mg methyl orange in 100 ml of water. The solution is heated up to 80-100° and a piece of filter paper is saturated with it. This piece of paper is dried without light and without being exposed to friction or acid gases. It is not said here whether the paper should be protected against light after drying. On to this piece of paper 1 drop of the solution to be investigated is applied, which should contain sodium sulfite and bisulfite. In this case the edge of the drop becomes pink. This is here explained by the fact that in the interior of the drop first the reaction of the sodium sulfite with chlorobarium occurs and at the edge of the drop the bisulfite reacts to chlorobarium:

$$\text{BaCl}_2 + \text{NaHSO}_3 \rightleftharpoons \text{BaSO}_3 + \text{HCl} + \text{NaCl}.$$

The hydrochloric acid separated on this occasion causes the methyl orange to assume a pink

Card 1/2

Short Reports (3)

32-12-17/71

color. This method is well applicable with a bisulfite content of about 0.2% in a saturated sodium solution and is mostly used in the production of phenol.

ASSOCIATION: Beresniki Aniline Dye Works (Bereznikovskiy anilo-krasochnyy zavod).

AVAILABLE: Library of Congress

Card 2/2 1. Sodium sulfite-Bisulphite determination-Method

VIGDOROV, A. S., KAFAROV, V. V.

Generalized definition of the efficiency coefficient of plates  
in rectification columns. Zhur.prikl.khim. 33 no.5:1091-1101 My  
'60. (MIRA 13:7)

(Plate towers) (Mass transfer)

KAFAROV, V.V.; VIGDOROV, A.S.

Generalised expression for determining the number of transfer  
units. Zhur.prikl.khim. 33 no.7:1506-1513 J1 '60.

(MIRA 13:7)

(Mass transfer) (Distillation, Fractional)

KAFAROV, V.V., doktor tekhn.nauk, prof.; VIGDOROV, A.S., inzh.

Sieve-plate column for carrying out heat and mass transfer  
processes with a stable amount of liquid. Khim.mash. no.2:6-8  
Mr-Ap 61. (MIRA 14:3)

(Plate towers)

KAFAROV, V.V., doktor tekhn.nauk, prof.; VIGDOROV, A.S., inzh.

Comparative study of the hydraulics of sieve plates with various  
overflow devices. Khim.mash. no.3:13-16 My-Je '61. (MIRA 14:5)  
(Plate towers) (Hydraulics)

KAFAROV, V.V.; VIGDOROV, A.S.

Static pressure of foam on sieve plates. Zhur.prikl.khim. 34 no.3:  
664-572 Mr '61. (MIRA 14:5)  
(Foam) (Plate towers)

ACC NR: AP6029018

SOURCE CODE: UR/0413/66/000/014/0021/0021

INVENTOR: Chalykh, S. N.; Kafarov, V. V.; Vigdorov, A. S.; Savost'yanov, N. I.; Gromova, I. I.; Podgorbunskikh, M. T.; Kolesnikov, A. S.; Lufarov, V. Ye.

ORG: none

TITLE: Preparation of salts of dithiocarbamic acid derivatives. Class 12, No. 183735. [announced by Scientific Research Institute of Organic Intermediates and Dyestuffs (Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 21

TOPIC TAGS: sodium dithiocarbamate, alkyl dithiocarbamate, dialkyl dithiocarbamate, carbamic acid, organic salt

ABSTRACT: Usually, salts of dithiocarbamic acid derivatives of the general formula:

(where  $R_1$  and  $R_2$  are  $CH_3$  or  $C_2H_5$ ;  $Ma$  is  $Na$ ) are obtained by the reaction of carbon disulfide with a solution of an amine in the presence of alkalies. To improve the technological process and to increase the yield and quality of the final product, the process is carried out in dilute solutions of amines with a 5% excess of  $CS_2$

Card 1/2

UDC: 547.496.2.07

ACC NR: AP6029018

at 25—45°C in the presence of surfactants with subsequent removal  
of CS<sub>2</sub> in vacuo (350 mm Hg). [WA-50; CBE No. 11]

SUB CODE: 07/ SUBM DATE: 21Jun65/

Card 2/2

ACC NR: AP6029018

SOURCE CODE: UR/0413/66/000/014/0021/0021

INVENTOR: Chalykh, S. N.; Kafarov, V. V.; Vigdorov, A. S.; Savost'yanov, N. I.; Gromova, I. I.; Podgorbunskikh, M. T.; Kolesnikov, A. S.; Lufarov, V. Ye.

ORG: none

TITLE: Preparation of salts of dithiocarbamic acid derivatives. Class 12, No. 183735. [announced by Scientific Research Institute of Organic Intermediates and Dyestuffs (Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 21

TOPIC TAGS: sodium dithiocarbamate, alkyl dithiocarbamate, dialkyl dithiocarbamate, carbamic acid, organic salt

ABSTRACT: Usually, salts of dithiocarbamic acid derivatives of the general formula:

(where  $R_1$  and  $R_2$  are  $CH_3$  or  $C_2H_5$ ;  $M$  is Na) are obtained by the reaction of carbon disulfide with a solution of an amine in the presence of alkalies. To improve the technological process and to increase the yield and quality of the final product, the process is carried out in dilute solutions of amines with a 5% excess of  $CS_2$

Card 1/2

UDC: 547.496.2.07

ACC NR: AP6029018

at 25—45°C in the presence of surfactants with subsequent removal  
of CS<sub>2</sub> in vacuo (350 mm Hg). [WA-50; CBE No. 11]

SUB CODE: 07/ SUBM DATE: 21Jun65/

Card 2/2

VODOVOZOV, G.Z.; VIGDOROV, D.I.

Calculating the attenuation of high-frequency signals in wire communication channels of field remote-control systems. Izv. vys. ucheb. zav.; neft' i gaz. 8 no.5:93-97 '65. (MIRA 18:7)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova i Nauchno-issledovatel'skiy i proyektnyy institut po kompleksnoy avtomatizatsii proizvodstvennykh protsessov v neftyanoy i khimicheskoy promyshlennosti.

FRIDMAN, M.Ye.; VIGDOROV, D.I.

Transforming single-phase voltage into triple-phase in deep-well  
telemetering units. Izv. vys. ucheb. zav.; neft' i gaz 8 no.4:95-  
100 '65. (MIRA 18:5)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.

ABRAMOV, A.Kh.; VIGDOROV, D.I.

Approximation of experimental characteristics and calculation  
of maximum errors of measuring instruments using a digital  
computer. Izv. tekhn. no.1:8-11 Ja '64.

(MIRA 17:11)

VIGDOROV, D.I.

Organizing communication channels in the power distribution  
networks of offshore oil fields. Izv. vys. ucheb. zav.; neft'  
i gaz 5 no.10:97-102 '62. (MIRA 17:8)

1. Azerbaydzhanskiy institut nefti i khimii imeni Azizbekova.

ACCESSION NR: AP4014637

S/0115/64/000/001/0008/0011

AUTHOR: Abramov, A. Kh.; Vigdorov, D. I.

TITLE: Methods of approximating experimental characteristics and estimation of maximum error of instruments on a digital computer

SOURCE: Izmeritel'naya tekhnika, no. 1, 1964, 8-11

TOPIC TAGS: computer, digital computer, measuring instrument, instrument error, estimating instrument error, experimental characteristic approximation, maximum instrument error

ABSTRACT: The experimental characteristic of an instrument is specified as a table with the argument values taken at equal intervals. Parameters  $a$  and  $b$  of this straight-line equation  $y = a\varphi + b$ , are sought that minimize the maximum deviation  $v_1$ . As a first approximation, the parameters are determined from a set of equations written by the method of the mean. Then, all calculated deviations  $v_1, v_2, \dots, v_n$  are regarded as a sequence of positive and negative numbers, among which three maximum deviations with alternating signs are

Card 1/2

▲ACCESSION NR: AP4014637

singled out. These three deviations are substituted into the set of equations, etc., which results in a second approximation. The process can be repeated as many times as needed. A "Minsk-1" digital computer, whose speed is 2,000-3,000 operations per second, was used for calculating the error of measurement of an angle/phase transducer intended for telemeter purposes. The program occupied 608 cells in the internal storage, and the overall machine time was 20 sec or less. Orig. art. has: 3 figures and 6 formulas.

ASSOCIATION: Azerbaydzhanskiy institut nefti i khimii im. M. Azizbekova  
(Azerbaijani Institute of Petroleum and Chemistry)

SUBMITTED: 00

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: IE

NO REF SOV: 002

OTHER: 000

Card 2/2

VIGDOROV, D.I.

Method for calculating a communication channel using the power networks of offshore oil fields. Izv.vys.ucheb. zav.;neft' i gas 5 #b.5:95-100 '62. (MIRA 16:5)

1. Azerbaydzhanskiy institut nefti i khimii imeni M.Azizbekova.  
(Petroleum industry--Communication systems)

YEL'YASHEVICH, Z.B.; PETROSYAN, A.N.; GRACHEV, Yu.V.; VIGDOROV, D.I.;  
FRIDMAN, M.Ye.

Using field electric networks as a remote control communication  
channel. Izv. vys. ucheb. zav.; neft' i gaz 3 no.11:91-94 '60.  
(MIRA 14:1)

1. Azerbaydzhanskiy institut nefti i khimii imeni M.Azizbekova.  
(Remote control) (Oil fields)

VIGDOROV, D.I.

High-frequency parameters of low-voltage electric networks of off-shore oil fields. Izv. vys. ucheb. zav.; neft' i gaz 4 no.5:95-102 '61. (MIRA 15:2)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.  
(Azerbaijan--Oil well drilling, Submarine--Electric equipment)

VIGDOROV, I.

PA 22T18

USSR/Aeronautics  
Gunnery, Aerial  
Flight Training

Aug 1947

"Comparison of Various Sighting Methods in Aerial  
Combat," I. Vigdorov, 9 pp

"Vestnik Vozdushnogo Flota" No 8 (342)

The author discusses the practical merits of leading a target by the "fuselage" method and of sighting through a ring sight. He stresses the need of calculating the speed of the target plane in both methods. Also gives several mathematical formulae for the calculation of errors in determining the initial factors in sighting for fire from a plane to an aerial target, and the dispersion of fire when a ring sight is used.

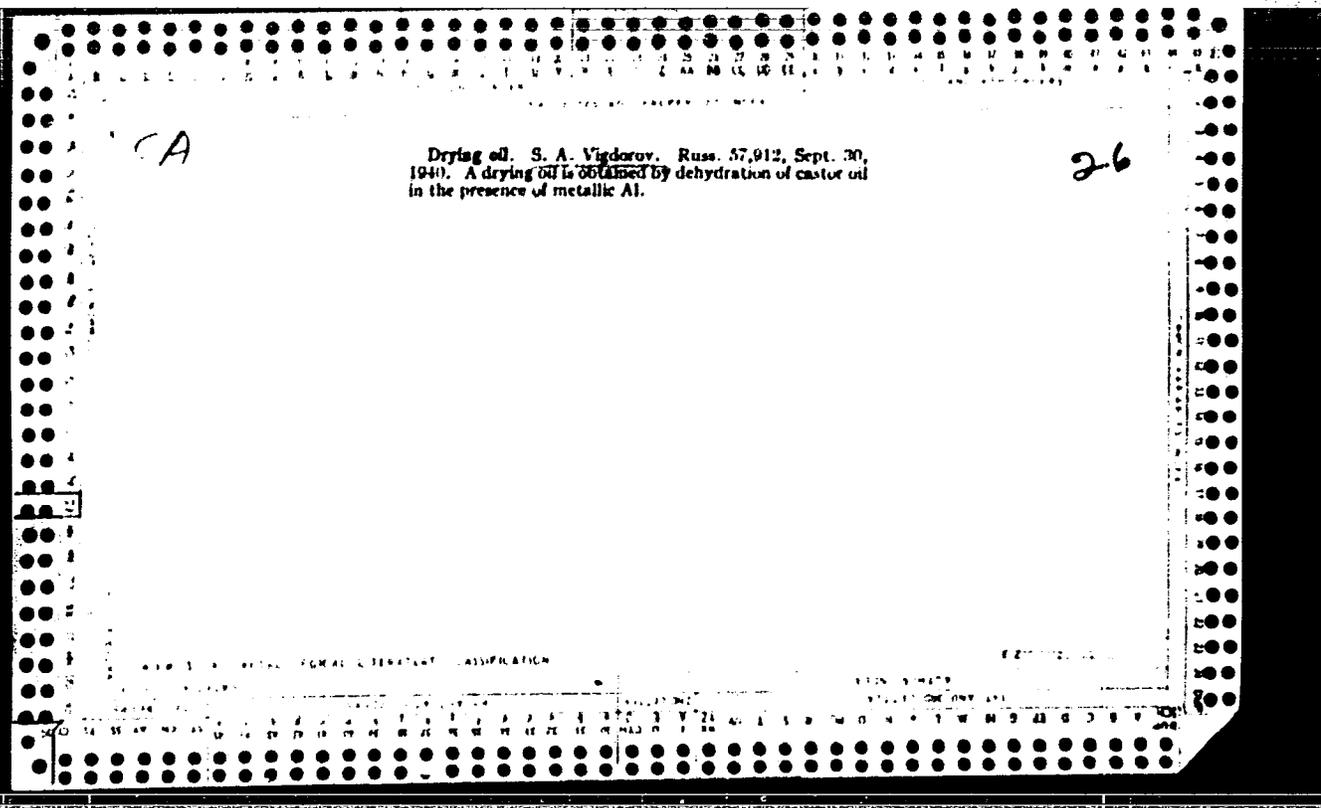


VIGDOROV, Z.G.

Experience in the operation of electric bridge cranes. From.  
energ. 16 no.2:18-20 *V* '61. (MIRA 14:3)  
(Electric cranes)

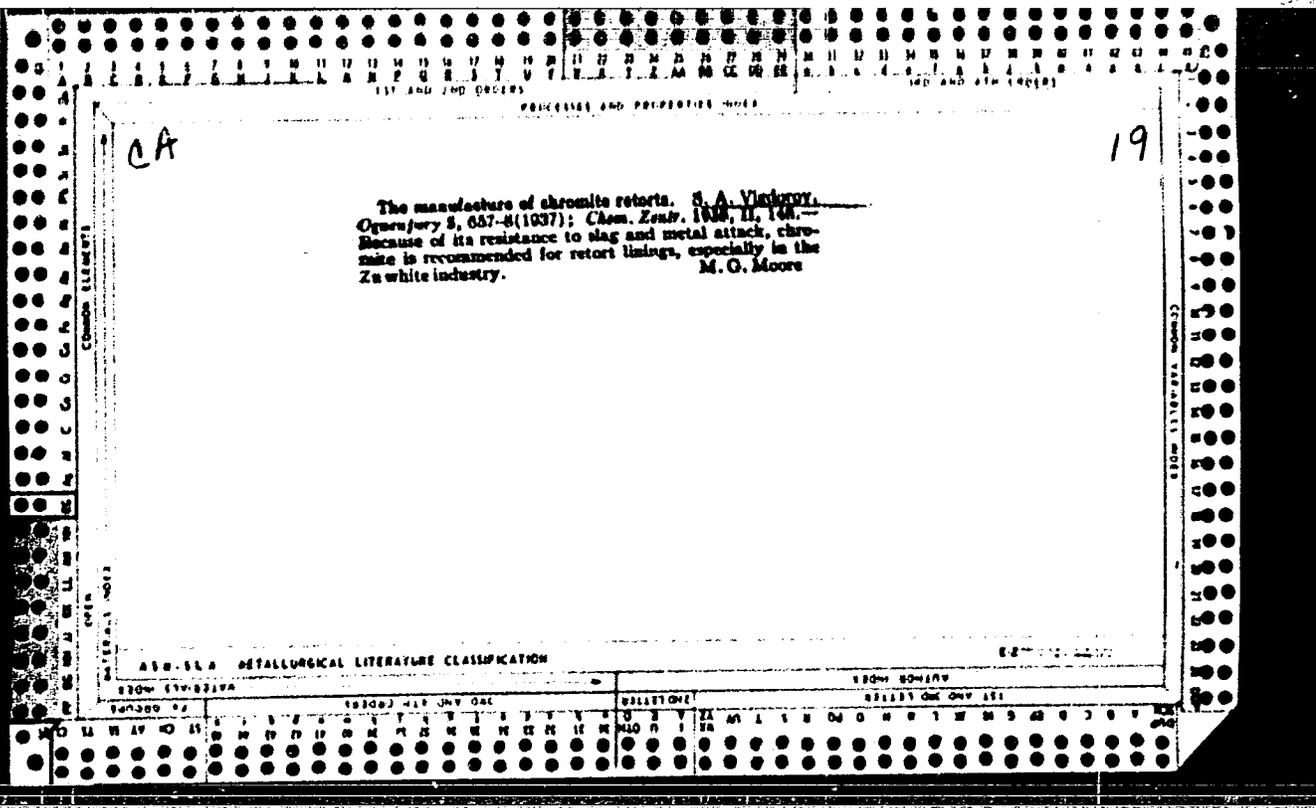












PROCESSES AND PROPERTIES INDEX

26

CF

The preparation of nonprecipitating paints. S. A. Vigdorov and T. D. Golovacheva. *Izvest. Krestov. Nauch.-Issledovatel. Inst. Prikl. Khim.* 1937, No. 2, 59-63; *Khim. Referat. Zhur.* 1, No. 3, 84(1938). Expts. with  $Cr_2O_3$ ,  $PbCrO_4$ , and  $PbO_2$  showed that the degree of pptn. is not a function of the d. of the pigments. The addn. of substances increasing the surface tension decreases the pptn. Even a 1% soln. of Al naphthenate prevents the pptn. in paints and leaves an enamel-like coat with good adhesive properties. The addn. of Al stearate promotes the porosity of the ppt. which is formed on standing, and which can be easily blended with the upper layer. An electrolyte,  $Na_2SO_4$ , is added to prevent the sepn. of both colored components. W. R. Hean

ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1ST AND 2ND COLUMNS

PROCESSES AND PROPERTIES INDEX

CA

The preparation of potassium ferrocyanide from calcium cyanamide. S. A. Nigolovskaya. *J. Applied Chem. (U. S. S. R.)* 12, 467 (1939).—A review, with about 9 references. A. A. Podgorny

COMMON ELEMENTS

COMMON PROPERTY INDEX

330.314 METALLURGICAL LITERATURE CLASSIFICATION

330.314.01

330.314.02

330.314.03

330.314.04

330.314.05

330.314.06

330.314.07

330.314.08

330.314.09

330.314.10

330.314.11

330.314.12

330.314.13

330.314.14

330.314.15

330.314.16

330.314.17

330.314.18

330.314.19

330.314.20

330.314.21

330.314.22

330.314.23

330.314.24

330.314.25

330.314.26

330.314.27

330.314.28

330.314.29

330.314.30

330.314.31

330.314.32

330.314.33

330.314.34

330.314.35

330.314.36

330.314.37

330.314.38

330.314.39

330.314.40

330.314.41

330.314.42

330.314.43

330.314.44

330.314.45

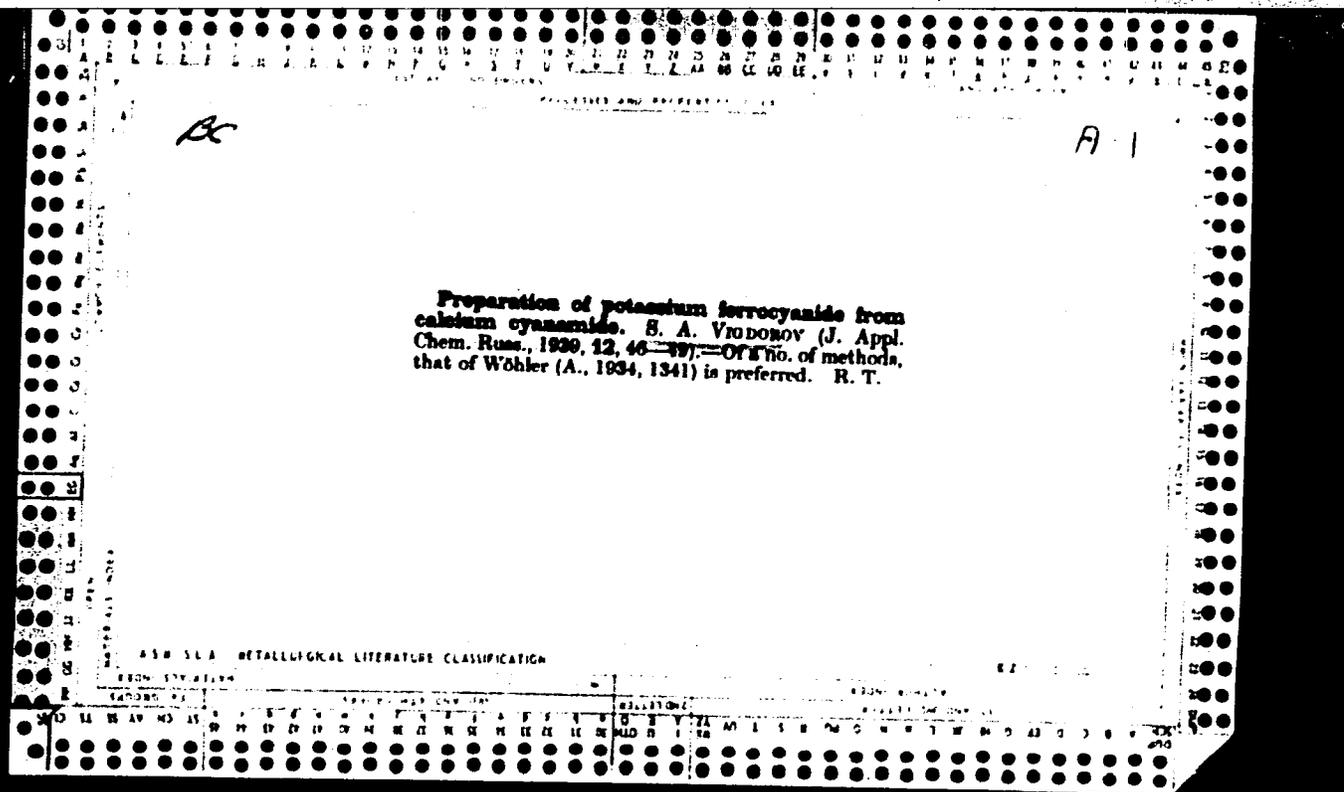
330.314.46

330.314.47

330.314.48

330.314.49

330.314.50



137 AIR AND SEVERE		PROCESSES AND PROPERTIES INDEX	138 AIR AND SEVERE
BC			B-I-A
<p>Dehydration of moist hydrogen sulphide for regeneration. S. A. Vignovoy (J. Appl. Chem. Russ., 1938, 11, 422-415).—The H<sub>2</sub>S is cooled to 25° and passed through CaCl<sub>2</sub>, which removes 90% of the H<sub>2</sub>O, and then through Al<sub>2</sub>O<sub>3</sub>, which removes HCl and residual H<sub>2</sub>O. R. T.</p>			
A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION			
EDOM SYMBLUM		EDOM SYMBLUM	EDOM SYMBLUM
EDOM SYMBLUM			

VIGDOROVICH, A., inzh.; SHILYAYEV, A., inzh.

Machine for washing external parts of units. Avt. transp.  
41 no.6:33-34 Je '63. (MIRA 16:8)

SHILYAYEV, A., inzh.; VIGDOROVICH, A., inzh.

Semiautomatic machine for manufacturing capron parts. Avt.transp.  
41 no.4:52-53 Ap '63. (MIRA 16:5)  
(Plastics machinery)

VIGDOROVICH, B. I.

PROCESSED AND PREPARED BY

Fate of carcinogenic substances in the organism V. Introduction of carcinogenic hydrocarbons into the alimentary tract. B. I. Vignozovich (White House State Med. Inst., Minsk). *BYULL. KHIM. MED. MED. 23*, No. 6, 213 (1948); cf. *C.A.* 41, 3203A. Administration of benzopyrene or methykholanthrene to mice and rats (0.2 and 0.6 mg., resp.) in milk or in sunflower oil soln. spread on bread, followed by postmortem examn. at various intervals up to 24 hrs. showed that within 3 hrs. the hydrocarbons are present in the lower intestine, apparently transported by the blood. The bulk of the hydrocarbons slowly (over 24 hrs.) passes down the tract and is eliminated chemically unchanged. A portion is retained in the upper stomach, where it may persist for longer than 48 hrs., which apparently accounts for prevalence of chemically induced cancer in this location. G. M. K.

ASS. SLA. METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED SERIALIZED FILED

APR 1950

S/169/63/000/002/093/127  
D263/D307

**AUTHORS:** Vigdorovich, D. A., Zivert, R. R. and Ryss, Yu. S.

**TITLE:** Development of a rational combined method of prospecting for polymetallic deposits on territories with a large proportion of loose deposits

**PERIODICAL:** Referativnyy zhurnal, Geofizika, no. 2, 1963, 16-17, abstract 2D98 (In collection: Novoye v metodike i tekhn. geologorazved. rabot, 5. L., 1962, 156-179)

**TEXT:** In the search for new means of solving the problems of exposing deep-seated polymetallic deposits, the authors have carried out geophysical experimental studies on two deposits of Rudnyy Altay. According to the authors, the current low effectiveness of the above prospecting methods is due to organizational and not to geological factors. In the deposits studied, the ores consist of numerous sulfides, lying in the form of slab-like strata with an almost vertical dip in quartz-sericite schists under 100 - 200 m of loose deposits. As a result of these studies a method has been de-

Card 1/3

Development of a rational ...

S/169/63/000/002/093/127  
D263/D307

veloped for the prospecting for deep-seated deposits in covered territories, the use of which allows a considerable reduction of drilling work. The method is based on wide utilization of ground and underground geophysical and geochemical methods, and on rational step-by-step application of various methods in dependence of their geological possibilities. Magnetic and gravimetric exploration is carried out in the first stage of the works, to show differences of rocks, contacts and other geological features. Hydrochemical surveying is employed to determine the metallogenetic characteristics. Thickness of the loose deposits is determined with the aid of electric exploration (vertical electric sounding). In areas where the thickness does not exceed 30 - 50 m, zones of pyritization, hydrothermal metamorphism and the presence of schists may be disclosed by the methods of the natural electric field and induced polarization. In the second stage, a geological map of the area studied is constructed, and ore fields are marked out. To this end the area is explored with charting boreholes. Drill cores (loose deposits and fundamental rocks) are also sampled, observations are carried out on the natural electric field and ground waters are

Card 2/3

Development of a rational ...

S/169/63/000/002/093/127  
D263/D307

studied. The third stage consists of a second search for ore deposits within the discovered promising zones. Deep boreholes are drilled, sampling the cores to study the primary dispersion aureoles of metals and the neighborhood is studied with variations of the current and natural field methods which involve boring holes. In the presence of electric conductors in the section, radioscopy and a borehole variant of induced polarization are used. Assessment of mineralization and preliminary exploration of the deposit are carried out by the same methods, and also by the method of charging and core sampling by electrical means. / Abstracter's note: Complete translation. /

Card 3/3

VIGDOROVICH, D.A.; TRUSHKOV, Yu.N.

Boring in prospecting for placer deposits. Trudy VITR  
no.3:95-106 '61. (MIRA 15:7)

(Boring)  
(Placer deposits)

VIGDOROVICH, L., inzh. (Khabarovsk)

~~Feed of a nearby power-operated radio station along a neon light~~  
cable. Grazhd. av. 15 no.4:28 Ap '58. (MIRA 11:5)  
(Radio stations) (Electric lines)

~~VIGDOROVICH, L.~~

84-12-32/49

**AUTHOR:** Vigdorovich, L., Efficiency and Innovations Engineer (Khabarovsk)

**TITLE:** Far Eastern Innovators (Dal'nevostochnyye ratsionalizatory)

**PERIODICAL:** Grazhdanskaya aviatsiya, 1957, p 25 (USSR)

**ABSTRACT:** The author reports on activities in the field of improvements. As an example, several changes of designs and additions introduced locally on the An-2, the Li-2, the Yak-12 and the Mi-4 helicopter, are mentioned together with the names of a number of innovators. Criticism is concentrated against the State Scientific Research Institute of the GVF for bureaucratism and superficiality. Revision of its methods of processing the proposals are demanded. The poor quality of the drawings issued by the Institute is another reason for complaints. The author suggests periodical conferences of engineers concerned with improvements, at which not only advanced achievements but also directives for future development of inventive activity should be discussed.

**AVAILABLE:** Library of Congress

Card 1/1

CHISTOZVONOV, S.B.; KHANIN, N.S., kand.tekhn.nauk; YESIPOVICH, R.A.,  
nauchnyy red.; VIGDOROVICH, M.B., red.; KOGAN, F.L., tekhn.red.

[Modern foreign motor-vehicle diesel engines; survey] Sovremennye  
zarubezhnye avtomobil'nye dizeli; otzo'. Moskva, 1963. 171 p.  
(Moscow. Tsentral'nyi institut nauchno-tekhnicheskoi informatsii  
po avtomatizatsii i mashinostroeniiu. Seriya III: Novye mashiny,  
oborudovanie i sredstva avtomatizatsii, no.66). (MIRA 16:12)

PETRUSHEVSKIY, S.A., otv. red.; KOLBANOVSKIY, V.N., red.; PLATONOV  
G.V., red.; SHAKHPARONOV, M.I., red.; SHIROKOV, M.F., red.;  
VIGDOROVICH, M.I., red.

[Dialectical materialism and present-day natural science;  
materials of the All-Russian Seminar of Lecturers in Social  
Sciences on philosophy problems of present-day natural sci-  
ence] Dialekticheskiy materializm i sovremennoe estestvozna-  
nie; sbornik materialov Vserossiiskogo seminaru prepodavate-  
lei obshchestvennykh nauk po filosofskim voprosam sovremen-  
nogo estestvoznaniia. Moskva, Izd-vo Mosk. univ., 1964. 403 p.  
(MIRA 17:7)

1. Moscow. Institut povysheniya kvalifikatsii prepodavateley  
obshchestvennykh nauk. Kafedra dialekticheskogo i istoriche-  
skogo materializma.

VIGDOROVICH, V. (Moskva); KRAPUKHIN, V.V. (Moskva); CHERNOMORDIN, I.F.;  
(Moskva)

Preparation of high purity aluminum by the zonal recrystallization  
method. Izv.AN SSSR.Otd.tekh.nauk.Met.i topl. no.4:99-105 J1-Ag  
'60. (MIRA 13:9)  
(Aluminum) (Crystallization)

L-12897-66 EWT(m)/ETC(F)/EWG(m)/T DS

ACC NR: AP5027581

(A)

SOURCE CODE: UR/0364/65/001/011/1374/1376

AUTHOR: Marshakov, I. K.; Ugay, Ya. A.; Vigdorovich, V. I.; Anokhina, M. I.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Effect of ammonium ion on hydrogen overvoltage

7,44.56

41  
B

SOURCE: Elektrokhimiya, v. 1, no. 11, 1965, 1374-1376

TOPIC TAGS: magnesium, hydrogen, electrochemistry

ABSTRACT: The effect of ammonium ions on the rate of dissolution of magnesium and the kinetics of anodic and cathodic processes was studied. MG-1 magnesium containing 0.08% impurity was used in this study. The rate of dissolution of Mg, determined from chemical analysis of the solution for Mg, was found to be practically independent of the anion content, but increased rapidly upon the addition of ammonium ion. The corrosion of magnesium in aqueous solutions proceeds primarily with the depolarization of hydrogen. Consequently, the kinetics of the reduction of the hydrogen ion were investigated on pure resublimed magnesium and on nobler metals because in the dissolution of technical magnesium, cath-

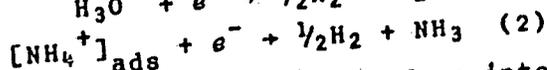
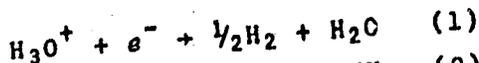
Card 1/3

UDC: 541.138.3:546.11

L 12897-66

ACC NR: AP5027581

odic reduction of the hydrogen ion proceeds primarily with respect to the noble metal impurities. Due to the high spontaneous dissolution currents of pure magnesium it was not possible to obtain the polarization of the electrode and the kinetics of hydrogen liberation could not be studied. The lowering of hydrogen overvoltage on other metals is shown in fig. 1. It is stipulated that the reduction of hydrogen proceeds by two reactions:



where adsorbed ammonium ions play the role of an intermediate complex

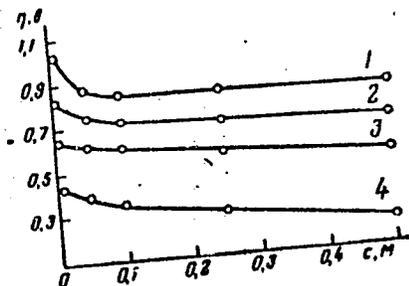


Fig. 1. Hydrogen overvoltage as a function of the concentration of ammonium ions at  $i = 10^{-3}$  a/cm<sup>2</sup>: 1--Zn; 2--Sn; 3--Fe; 4--Pt.

Card 2/3

L 12897-66

ACC NR: AP5027581

which lowers the energy of activation for the reduction of hydrogen ions.  
Orig. art. has: 2 figures, 1 table.

SUB CODE: 20,11/    SUBM DATE: 28Jan65/    ORIG REF: 007/    OTH REF: 001

Card 3/3

MAKSHAROV, T.S.; 1941, V. 1, No. 1, p. 1.

Mechanism of the reaction of copper with sodium -  
copper. Zashch. tel. 3. 1. 1941, No. 1, p. 1.

(MIRA 1818)

1. Vorozhezhskiy gosudarstvennyy universitet.

MARSHAKOV, I.K.; UGAY, Ya.A.; VIGOROVICH, V.I.

Mechanism of the corrosion of magnesium-zinc alloys. Zashch.  
met. 1 no.2:190-194 Mr-Apr '65. (MIRA 18:6)

1. Voronezhskiy gosudarstvennyy universitet.

L 2624-66 ENT(m)/EPF(c)/T/EWP(t)/EMP(b)/EMA(c) IJP(c) ID/HR  
ACCESSION NR: AP5011363 UR/0365/65/001/002/0190/0194  
620.193.01

AUTHOR: Marshakov, I. K.; Ugay, Ya. A.; Vigdorovich, V. I.

TITLE: Mechanism of corrosion of the magnesium-zinc alloys

SOURCE: Zashchita metallov, v. 1, no. 2, 1965, 190-194

TOPIC TAGS: corrosion, magnesium alloy, zinc alloy, corrosion resistance, corrosion rate

ABSTRACT: The mechanism of corrosion of magnesium-zinc alloys was studied at room temperature in 0.5-normal NaCl, 0.5-normal NaBr, and 0.1-normal HCl solutions. In corrosion tests, 12-15 ml of electrolyte was used per cm<sup>2</sup> of sample surface. The test duration was 5 hours in neutral media and 30 minutes in acidic media. Corrosion of alloys containing up to 65% Zn is very fast and is accompanied by heavy sludge formation. An intercrystalline type of corrosion is characteristic of alloys containing 65-72% Zn. Alloys containing more than 72% Zn corrode at a low rate and in a uniform manner. The corrosion of alloys containing up to 72% Zn is determined by the work of the phase corrosion elements:  $\alpha$ -solid solution--inter-

Card 1/4

53  
49  
B

L 2624-66

ACCESSION NR: AP5011363

metallic compound MgZn. On alloys containing 65-72% Zn, the anodic zones are small and dissolving proceeds along narrow channels between the individual grains of the intermetallic compound. Thus, the alloy material may be completely destroyed with small weight losses. <sup>4</sup> Intermetallic compounds such as MgZn, MgZn<sub>2</sub>, and MgZn<sub>5</sub> participate in corrosion of alloys with over 72% Zn. As a result of difference in effectiveness of the corrosion elements, the rate of corrosion in bromide solutions is smaller than in chloride solutions. The rate of alloy corrosion in 0.5-normal NaCl is shown in fig. 1 of the Enclosure. The rate of alloy corrosion in 0.1-normal HCl is shown in fig. 2 of the Enclosure. The dependence of the steady-state potentials of alloys upon their composition is shown in fig. 3 of the Enclosure. Orig. art. has: 2 tables, 5 figures.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 26Sep64

ENCL: 02

SUB CODE: MM, GC

NO REF SOV: 005

OTHER: 001

Card 2/4

L 2624-66  
 ACCESSION NR: AP5011363

ENCLOSURE 01

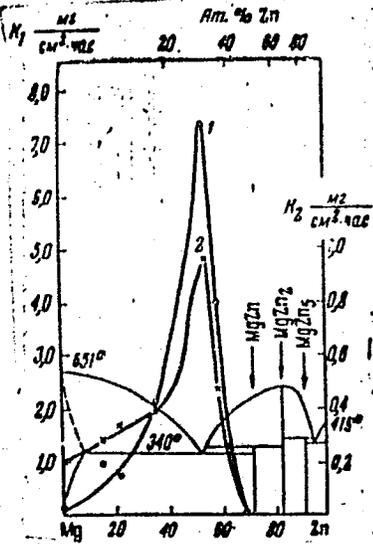


Fig. 1. 1--total material loss; 2--quantity of Mg in solution,  $K_1$ --the ordinate for curve 1;  $K_2$ --ordinate for curve 2.

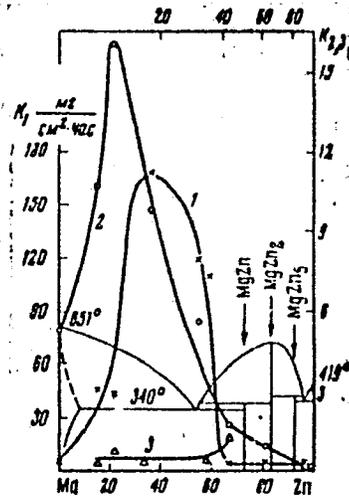


Fig. 2. 1--total material loss; 2--quantity of magnesium in solution; 3--quantity of zinc in solution;  $K_1$ --ordinate for curve 1;  $K_2, K_3$ --ordinate for curves 2 and 3.

Card 3/4

L 2624-66

ACCESSION NR: AP5011363

ENCLOSURE; 02

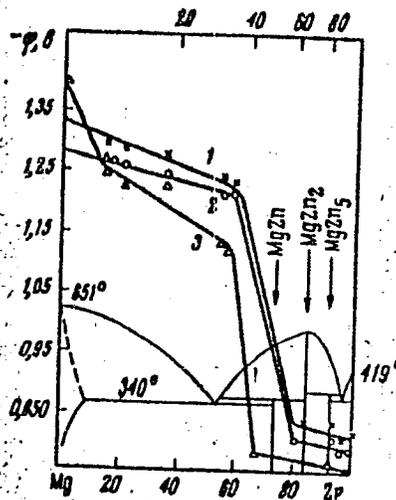


Fig. 3. 1--0.5n NaCl; 2--0.5n NaBr; 3--0.1n HCl.

Card 4/4 DP

Card 1/2

L 62492-51

ACCESSION NR APO117747





L 53891-65

ACCESSION NR: AP5014157

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 08May64

ENCL: 00

SUB CODE: MM, GC

NO REF SOV: 004

OTHER: 002

Card 3/3

VIGDOROVICH, V.N.; DARVOYD, T.I.; IORDANSKAYA, N.A.; MAMAYEV, Yu.O.

Distribution of impurities of silver during the purification  
of thallium by crystallization methods. Zhur.prikl.khim. 35  
no.10:2165-2170 0 '62. (MIRA 15:12)  
(Thallium) (Crystallization) (Silver)

I-34826-66 - EWT(m)/I/EWP(t)/ETI - IJP(c) - DS/JD

ACC NR: AP6017607

(A)

SOURCE CODE: UR/0364/66/002/002/0254/0258

AUTHOR: Marshakov, I. K.; Vigdorovich, V. I.; Vavresyuk, I. V.; Ugay, Ya. S.ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)TITLE: Effect of electrolyte solution on phase transitions in intermetallic compounds

SOURCE: Elektrokimiya, v. 2, no. 2, 1966, 254-258

TOPIC TAGS: intermetallic compound, electrolyte, phase transition, magnesium alloy, x-ray analysis

ABSTRACT: Various alloys are treated in a 0.1 N HCl solution for periods ranging from 10 minutes to 6 hours to study the effect of electrolyte solutions on phase transitions of intermetallic compounds. Chemical analysis was used for studying the soluble products of the interaction, while x-ray techniques were used for analyzing the insoluble products. An RKD camera was used with copper emission ( $\lambda_{K\alpha} = 1.537 \text{ \AA}$ ). Exposure time was 5-6 hours. The following compounds were studied:  $\text{MgZn}$ ,  $\text{MgZn}_2$ ,  $\text{Mg}_2\text{Cu}$ ,  $\text{MgCu}_2$ ,  $\text{Mg}_2\text{Sn}$ ,  $\text{Mg}_3\text{Sb}_2$ ,  $\text{In}_2\text{Bi}$  and  $\text{InBi}$ . It was found that the intermetallic compounds  $\text{MgZn}$  and  $\text{MgZn}_2$  dissolve uniformly, i. e. both components pass into solution in the same ratio in which they are present in the alloy. The dissolution of  $\text{Mg}_2\text{Cu}$  and  $\text{MgCu}_2$  is selective-- only the magnesium passes into solution, and the surface of the specimen is covered with a film which consists of metallic copper in the case of  $\text{MgCu}_2$ , and of a combin-

Card 1/2

UDC: 541.13

L 34826-66

ACC NR: AP6017607

ation of metallic copper and  $MgCu_2$  in case of  $Mg_2Cu$ . The formation of intermediate intermetallic compounds which are rich in the noble component may also be observed during dissolution of  $In_2Bi$ . Phase transitions with the formation of the noble component take place when  $Mg_2Sn$  and  $Mg_3Sb_2$  are treated in hydrochloric acid, with the antimony passing into solution in quantities of 8-10% while the tin concentration in solution is only slightly less than its content in the alloy. The experimental data indicate that the formation of the new phase may be due to rearrangement of a surface layer with a defective crystal lattice, or to electrochemical reduction of the noble ions. Orig. art. has: 2 tables.

SUB CODE: 20, 11/ SUBM DATE: 19Feb65 / ORIG REF: 004/ OTH REF: 001

Card 2/2 fl

L 06340-07 EWF(m)/EWP(L)/ETI LJP(c) JH/JD/WB

ACC NR: AP6030320

SOURCE CODE: UR/0153/66/009/003/0396/0400

AUTHOR: Vigdorovich, V. I.; Marshakov, I. K.; Ugay, Ya. A. 40  
13

ORG: Physical Chemistry Department, Voronezh State University (Kafedra fizicheskoy khimii, Voronezhskiy gosudarstvennyy universitet)

TITLE: Corrosion behavior of magnesium-antimony alloys in halide solutions 21 21 21

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 3, 1966, 396-400

TOPIC TAGS: corrosion, magnesium alloy, antimony alloy, CORROSION RATE, ALLOY PHASE DIAGRAM, HALIDE

ABSTRACT: The object of the work was a systematic study of the corrosion and electrochemical properties of magnesium-antimony alloys and their relationship to the phase diagram. The system contains the intermetallic compound  $Mg_3Sb_2$ , a semiconductor. The composition and structure of the alloys (which all exhibited a p-type conductivity) were checked by chemical and metallographic analysis. The corrosion behavior was studied in 0.5 N NaCl, 0.5 N NaBr and 0.1 N HCl at room temperature. The corrosion rate was found to increase with decreasing pH. In alloys containing up to 77% Sb, it is determined by the work of Mg- $Mg_3Sb_2$  phase microcells, whose electrodes have a considerable potential difference. This work is controlled by the cathodic reaction of hydrogen reduction. The corrosion of alloys containing more than 77% Sb occurs in neutral solutions with oxygen depolarization at a slow rate which is largely determined by the spontaneous dissolution of the phase components. X-ray structural data

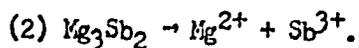
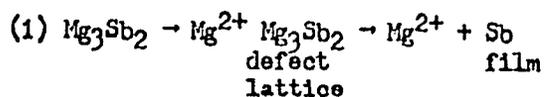
Card 1/2

UDC: 620.193

L 0674067

ACC NR: AP6030320

indicate that the corrosion of the intermetallic compound  $Mg_3Sb_2$  involves two simultaneous processes:



Since the Sb content of the solution is 1.5-10%, 86 to 98% of the destruction of  $Mg_3Sb_2$  is due to reaction (1). Orig. art. has: 4 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: 11Sep64/ ORIG REF: 001/ OTH REF: 002

Card 2/2 MLF

VIGDOROVICH, V.N.; GEBRNOMORDIN, I.F.

Characteristics of the zone recrystallization of aluminum.  
Izv. vys. ucheb. zav.; tsvet. met. 8 no.5:95-100 '65.

(MIRA 18:10)

1. Moskovskiy institut stali i splavov, kafedra proizvodstva  
chistykh metallov, metallicheskih soyedineniy i poluprovodnikovyykh  
materialov i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy  
institut redkometallicheskoy promyshlennosti, Moskva.

VIGOROVICH, V.N.; MARYCHEV, V.V.

Some particular cases of zone recrystallization. Zhur. fiz.  
khim. 39 no.8:2043-2046 Ag '65. (MIRA 18:9)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy  
institut redkometallicheskoj promyshlennosti.

L 13031-66 EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WW/JG  
ACC NR: AP5028582 SOURCE CODE: UR/0076/65/039/011/2738/2741

AUTHOR: Krestovnikov, A. N.; Vigdorovich, V. N.; Marychev, V. V.

ORG: Moscow State Scientific Research, Design and Planning Institute of the Rare Metal Industry (Moskovskiy gosudarstvennyy nauchno-issledovatel'skiy i projektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Effect of atomic number of impurities on their distribution coefficient

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 11, 1965, 2738-2741

TOPIC TAGS: impurity level, atomic property, metal purification, distribution coefficient, metal crystallization

ABSTRACT: The distribution coefficients of impurity elements have been evaluated for only a small number of elements and in many cases only preliminary determinations were made; therefore, the periodicity of changes of the distribution coefficients of impurities is only qualitative. In the aluminum matrix the distribution coefficients of short period impurities displayed one maximum: in the second period Be has the highest value, in the third period--Mg. In long periods two maxima are observed. The first maximum occurs in transition metals: fourth period--Ti, V, Cr; fifth period--Zr, Nb, Mo; sixth period--Ta, W;

27 27 27

27 27 27

27 27

UDC: 541.20

Card 1/2

L 13031-66

ACC NR: AP5028582

15

seventh period--Th. The second maximum falls in the fourth period on Cu, Zr, Ge; in the fifth period on Ag, Cd, In; in the sixth period on Pb and Bi. For indium and thallium matrices each period displays one maximum, primarily in the IB-VB groups. In antimony and bismuth matrices one maximum is displayed in each period, which occur with elements of the IVb-VIb groups. In the silicon matrix one maximum per group is observed, occurring with elements of the IIb-Vb groups and analogous behavior is observed in germanium. In the indium antimonide matrix similar behavior is observed in germanium but sufficiently high values of the distribution coefficients are also displayed by the elements of the IIb and VIb groups. Si, Ge and Sn do not follow the general behavior. It is proposed that the established periodicity of the behavior be used for the prediction of the behavior of impurities during crystallization of metals and semiconductors. Orig. art. has: 2 figures.

SUB CODE: 07,20/ SUBM DATE: 14Sep64/ ORIG REF: 010/ OTH REF: 004

Card

OR  
2/2

KRESTOVNIKOV, A.N.; VIGDOROVICH, V.N.; MARICHEV, V.V.

Distribution coefficients of impurities of chemical elements  
as dependent on their number in the periodic table. Zhur.fiz.  
khim. 39 no.11:2736-2743 N 165. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy nauchno-issledovatel'skiy i  
proyektnyy institut redkometallicheskey promyshlennosti.

GLAZOV, V.M.; VIGDOROVICH, V.N.; KOROL'KOV, G.A.

Effect of various factors on the results of microhardness measurements in the investigation of state diagrams. Zav.lab.22 no.11: 1343-1348 '56. (MLRA 10:2)

1. Institut metallurgii Akademii nauk SSSR imeni A.A.Baykova i Moskovskiy institut tsvetnykh metallov i zolota imeni M.I.Kalinina.

(Metals---Testing)

VIGDOROVICH, V.N.

AUTHOR: Mal'tsev, M.V. and Vigdorovich, V.N.

136-6-13/26

TITLE: Investigation of the Properties of Aluminium-Iron-Manganese Bronzes. (Issledovaniye svoystv alyuminiyevykh-zhelezomargantsovistykh bronz)

PERIODICAL: Tsvetnyye Metally, 1957, pp. 62-67 (USSR)

ABSTRACT: Type БрЖМц 10-3-1.5 bronze (9-11% Al, 2.0-4.0% Fe, 1.0-2.0% Mn according to ГОСТ 493-54) has excellent anti-friction and mechanical properties and is widely used for machine construction e.g. high-pressure pumps. This article, after dealing with relevant phase diagrams taken from the literature, goes on to describe the authors' work on this alloy. The work was carried out at the Krasnyy Vyborzhets Works and the metallurgical laboratory of the Moscow Institute for Non-ferrous Metals and Gold (Moskovskiy Institut Tsvetnykh Metallov i Zolota). This consisted mainly in hardness and strength determinations on copper-aluminium and copper-aluminium-iron-manganese alloys of various compositions and subjected to various heat treatments. The results are tabulated and shown graphically and phase changes are discussed with the aid of micro-structural data. It was found that with the permitted variations in composition the mechanical properties could differ considerably from those specified in the ГОСТ. By

136-6-13/26

Investigation of the Properties of Aluminium-Iron-Manganese Bronzes.

hardening from 850-900 °C alloys at the low-aluminium range can be given a tensile strength and hardness about 30 and 65%, respectively, greater than the standard values without loss of plasticity. With nominal-aluminium alloys hardening temperatures of 750-800 °C are effective, hardening after mechanical working is recommended for high-aluminium alloys only if plasticity is not important.

There are 3 figures, 2 tables and 8 references, of which 5 are Slavic.

AVAILABLE: Library of Congress

Card 2/2

~~SECRET~~  
GLAZOV, V.M.; VIGDOROVICH, V.N.; KOROL'KOV, G.A.

Applicability of microhardness testing to the investigation of binary and ternary equilibrium diagrams of metallic systems [with summary in English]. Zhur.fiz.khim.31 no.8:1891-1897 Ag '57 (MIRA 10:12)

1. AN SSSR, Institut metallurgii im. A.A.Baykova i Institut tsvetnykh metallov i zolota im. M.I.Kalinina, Moskva.  
(Hardness) (Metals) (Phase rule and equilibrium)



VIGDOROVICH, V. N.

24-2-22/28

AUTHORS: Vigdorovich, V.N., Krestovnikov, A.N. and Val'tsev, M.V.

TITLE: Investigation of the **state copper-titanium diagram**  
(Issledovaniye diagrammy sostoyaniya med'-titan).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, No.2, pp. 145-148 (USSR).

ABSTRACT: The method of zonal recrystallisation and thermal analysis was used by the author for solving the problem of presence of eutectic transformation  $L \rightarrow \alpha + \beta$  taking place at the temperature  $870 \pm 1^\circ\text{C}$  for a composition at the eutectic point of 17.1% Ti. The solubility of titanium in copper was determined by micro-hardness measurements; 7.4% Ti is the maximum limit solubility at the temperature of the eutectic horizontal. The results graphed in Fig.3 of the changes of the chemical composition along the length of a specimen of an alloy with 17.6% Ti content after zonal recrystallisation (head and tail parts) indicate the existence of a range of homogeneity corresponding to the inter-metallide  $\beta(\text{Cu}_3\text{Ti})$ , the lower limit of which is about 19.6% Ti at the eutectic temperature; the micro-hardness of the compound equalled  $370 \pm 15 \text{ kg/mm}^2$ . On

Card 1/2

Investigation of the state copper-titanium diagram . 24-2-22/23

the basis of the obtained results, a variant of the copper angle of the diagram of state Cu-Ti is drawn for titanium contents up to 20%.

There are 4 figures and 7 references - 6 Russian, 1 English.

SUBMITTED: August 1, 1957.

AVAILABLE: Library of Congress.

Card 2/2

VIGDOROVICH, V.N.; KRESTOVNIKOV, A.N.; MAL'TSEV, M.V. (Moscow)

Using microhardness technique in investigating solid solutions of three-component systems. Izv.AN SSSR. Otd.tekh.nauk no.3:110-113 Mr '58.  
(MIRA 11:4)

1. Institut tsvetnykh metallov i zolota im. M.I. Kalinina.  
(Systems (Chemistry)) (Solutions, Solid)

VIGDOROVICH, V.N.

3-58-4-20/34

**AUTHOR:** Krestovnikov, A.N., Professor and Vigdorovich, V.N. Assistant

**TITLE:** Three-Dimensional Models of Structural Diagrams (Prostranstvennyye modeli diagramm sostoyaniya)

**PERIODICAL:** Vestnik Vysshey Shkoly, 1958, # 4, pp 62 - 63 (USSR)

**ABSTRACT:** As the graphic representation of multi-component chemical systems is complicated, and difficulties arise when it proves necessary to illustrate lectures by graphic diagrams, the author recommends using models similar to those widely applied when teaching descriptive geometry, stereometry, analytical geometry, etc.  
Models of structural diagrams of multicomponent systems are not available in shops selling visual aids, but they can easily be made in the school laboratories or workshops.  
There are 2 drawings.

**ASSOCIATION:** Moskovskiy institut tsvetnykh metallov i zolota imeni M.I. Kalinina (The Moscow Institute of Non-Ferrous Metals and Gold imeni M.I. Kalinin)

**AVAILABLE:** Library of Congress

Card 1/1

MAL'TSEV, M.V., doktor tekhn. nauk; VIGDOROVICH, V.N

Investigating the properties of modified aluminum bronzes. Biul.  
TSIN tavet. met. no. 6:25-28 '58. (MIRA 11:7)  
(Aluminum bronze)

81532

SOV/137-59-5-11126

18.9200

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, pp 232-233  
(USSR)

AUTHORS: Glazov, V.M., Vigdorovich, V.N., Korol'kov, G.A.

TITLE: Microhardness Investigations as a Method of Physical and  
Chemical Analysis

PERIODICAL: Sb. nauchn. tr. Nauchno-tekhn. o-vo tsvetn. metallurgii, Mosk.  
in-t tsvetn. met. i zolota, 1958, Nr 29, pp 135 - 142

ABSTRACT: The author describes the use of microhardness investigations as a method of physical and chemical analysis. The microhardness method is used to investigate the phenomenon of intercrystalline segregation and transformation in the solid state (changes in solubility, eutectoid, peritectoid and other transformations). The method represents a satisfactory combination of microstructural investigations with the determination of the mechanical property (hardness) of individual structural components of the alloy. In these cases the microhardness method may successfully compete with the microscopical method, which

Card 1/2

81532

SOV/137-59-5-11126

Microhardness Investigations as a Method of Physical and Chemical Analysis

yields unaccurate results, and with the roentgenostuctural method when the solubility is low or when the magnitudes of atomic diameters have been approached. The application of the microhardness method for investigating the solid state solubility is possible due to the fact that proportionally to the increase in the second component of the alloy its amount increases in the solid solutions. After attaining the point of ultimate saturation at a given temperature it remains constant. As a result, the curve of variable microhardness of the solid solution has a quite determined form. The author suggests natural systems of diagrams, plotting composition versus microhardness where the phenomenon of microheterogeneization in the grains of the solid solutions of bi-phase alloys is taken into account. The microhardness method can be used to plot surfaces of limited solubility in three-component systems (with the aid of the isotherm of composition versus microhardness of crystals of the solid solution for any section of the structural diagram) and to plot the solidus of binary and triple systems (with the use of isotherms or polytherms of microhardness).

V.N.

Card 2/2

32-24-6-32/44

AUTHORS: Vigdorovich, V. N., Vol'pian, A. Ye.

TITLE: Method for Obtaining Exact Values of the Microhardness by Chemically Removing Solidified Surface Layers (Metodika polucheniya pravil'nykh znacheniy mikrotverdosti putem khimicheskogo udaleniya poverkhnostno naklepanykh sloyev)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 6, pp 762 - 764 (USSR)

ABSTRACT: The values of the microhardness are falsified by the presence of a solidified surface layer; therefore some methods exist for removing the latter, comprising that by chemical etching. The duration of etching is to be fixed in such a way that in the case of a further prolongation the microhardness remains constant, being different for different metals and alloys, and on the other hand being determined by the etching medium itself. The value of the etching velocity is determined by the dependence of the mean value of the microhardness on the duration of etching, and the degree of the etching equality is characterized by the magnitude of the deviation of the

Card 1/3

32-24-6-32/44

Method for Obtaining Exact Values of the Microhardness by Chemically Removing Solidified Surface Layers

measuring results of microhardness, which shows as a coefficient of the measuring error. In the present case the quantitative rules were less determined than the general character of the variation of the function of the measuring error coefficient on the duration of etching; this was also graphically dealt with. As may be seen from the mode of operation used various etching media were applied; the results obtained show that  $\text{FeCl}_3 + \text{HCl}$  is favorable for the preparation of copper surfaces as well as of the alloys Cu-Al, Cu-Ti, and Cu-Al-Ti.  $\text{NH}_4 + \text{H}_2\text{O}_2$  was found to be an insufficient etching medium while  $\text{K}_2\text{Cr}_2\text{O}_7 + \text{NaCl} + \text{H}_2\text{SO}_4 + \text{HF}$  is favorable for the preparation of copper surfaces and Cu-Ti alloys. The method described yields well reproducible results and can be used in the practical application of the method of microhardness in physical-chemical analyses. There are 2 figures and 5 references, which are Soviet.

Card 2/3